RFP Review – Charge
Distribution Feedboxes – DFBX

Background:

LBNL is responsible for providing the eight interaction region inner triplet cryogenic feedboxes. The feedboxes provide the interface from the inner triplet superconducting magnet system (including the single-aperture beam separation dipole at IR 2 and 8) to the LHC cryogenic, DC power and instrumentation systems.

The LBNL work scope includes:

- The design, development, procurement, and shipping of the feedboxes.
- The specification, procurement, and testing of HTS current leads capable of carrying 7.5kA.
- The design, development, and fabrication or procurement of shipping containers, internal and external systems of shipping restraints and instrumentation required to verify the condition of the feedboxes during shipping.
- The engineering work done in collaboration with Fermilab and CERN to define the requirements for the IR cooling system and for the valve boxes that interface to the feedboxes. (The fabrication of the valve boxes is CERN's responsibility.)

The subject of this review is the Request for Proposal (RFP) that LBNL is ready to release to potential vendors. The review will also include the supporting documents to the RFP, status and plans for DFBX materials and components that LBNL will provide to the vendor, and plans for other interactions with the vendor during fabrication.

Previous Design Reviews:

This RFP review covers the cryogenic feedboxes, DFBX, including the specifications for assembly by the vendor. It follows several reviews conducted during the course of the design as itemized in the table below.

Date	***Previous Major Reviews***
03 December 1998	CDR – conceptual design review
28 June 1999	Interface review
28 July 1999	Interface review at CERN
13-14 March 2000	IDR – interim design review
16-17 November 2000	HTS leads EDR at vendor
12 March 2001	EDR – engineering design review at CERN
1 February 2002	HTS leads PRR at vendor
7 May 2002	PRR – production readiness review

In the Fall of 2001, it was decided to conduct several detailed technical reviews, mostly at the level of detailed drawings. Most of the reviews were led by Tom Peterson of Fermilab and typically involved two or three other engineers.

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Date	*Detail Technical Reviews*
November 2001	Fabrication study by Meyer Tool and PHPK.
25-26 February 2002	Review of design in parallel with DOE cost review.
17-18 April 2002	Engineering review with PMO and DOE.
18-19 June 2002	Piping arrangements.
6-8 August 2002	Review of drawings by Don Brown.
21-22 August 2002	Piping arrangements.
4-5 September 2002	Reviewers included R. van Weelderen & V. Benda from CERN.
25-26 September 2002	Final details of DFBXG drawings and RFP strategy.

DFBX RFP Team:

The RFP plan is represented by:

- Bill Turner, LBNL Project Manager
- Joseph Rasson, LBNL
- Jon Zbasnik, LBNL
- Daryl Oshatz, LBNL
- Kem Robinson, LBNL
- Steve Virostek, LBNL
- Roy Hannaford, LBNL
- Ron Ball, LNBL
- Tom Peterson, FNAL

Design Review Committee:

The design review committee members are as follows:

- Pat Kelley, LANL, Chair
- Phil Pfund, FNAL
- Jim Strait, FNAL
- Gregg Kobliska, FNAL
- Dick DiGenarro, LBNL
- Ed Daly, JLab
- John Weisend, SLAC
- Mike Eberstein, LLNL
- Bruce Strauss, DOE (observer)

Scope of the Review:

This RFP review will cover the plans for issuing the request for proposal (RFP) for fabrication of the eight feedboxes. The review is expected to include a strategy for procurement, quality assurance, testing, inspection, and engineering documentation. The plans to be reviewed and approved as part of the RFP review are:

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1. *RFP Strategy*: The vendors have expressed a desire to begin working on the proposal package as soon as possible. LBNL will issue an initial RFP package with detailed drawings for one of the feedboxes followed by the complete set of detailed drawings for all feedboxes before the proposals are due. The vendor proposals will be evaluated by an evaluation advisory committee.

2. *RFP Package*: The documents that will be provided with the RFP package will be summarized and discussed in detail as the reviewers desire.

3. *Government furnished material*: Various parts and subassemblies will be fabriated by LBNL, commercial vendors, and other DOE laboratories and provided to the DFBX vendor for installation during fabrication. LBNL will manage the supply of this material to the vendor.

4. *Fabrication Oversight*: LBNL will need to ensure active monitoring and change control of the DFBX vendor to ensure adherence to schedule and quality.

The design review committee has the usual freedom to investigate other areas of the DFBX design and fabrication plans that present a risk to the successful completion of the project, installation, and operation in the LHC.

Date of the Review Committee Meeting:

The review is scheduled for Wednesday-Thursday 23-24 October 2002 at LBNL. It is anticipated to take two days.

Results of the Review:

The review is expected to result in a clear statement by the Project Manager, based on the recommendation of the review committee, approving the release of the RFP or requiring that additional work be done before it can be released. The review committee is expected to make their recommendations with this objective in mind. Additional recommendations and action items addressing work that must be done following the release of the RFP may also result from this review.

The review will be complete with the issuing of a report summarizing the topics reviewed, committee recommendations, and action items. The forecast date for completion of the review is 22 November 2002.